

HISTORIC PROPERTY INVENTORY FORM

IDENTIFICATION SECTION

Field Site No. 218-E-16 OAHP No. _____ Date Recorded 30 December 1997
Site Name Historic Grout Vaults Revised 10 September 1998
Common _____
Field Recorder Holly K. Chamberlain
Owner's Name U.S. Department of Energy, Richland Operations Office
Address P.O. Box 550
City/State/Zip Code Richland, WA 99352

Status

- ☒ Survey/Inventory
☐ National Register
☐ State Register
☐ Determined Eligible
☐ Determined Not Eligible
☐ Other (HABS, HAER, NHL)
☐ Local Designation

Photography

Photography Neg. No. (See continuation sheet)
(Roll No. & Frame No.)
View of (See continuation sheet)
Date (See continuation sheet)

Photo at right: Hanford Photo Lab # 91081479-7cn.
View of grout vaults under construction.

Classification ☐ District ☐ Site ☐ Building ☒ Structure ☐ Object
District Status ☒ NR ☐ SR ☐ LR ☐ INV
Contributing ☒ Non-Contributing
District/Thematic Nomination Name Hanford Site Manhattan Project and Cold War Historic District

Description Section

Materials & Features/Structural Types

Building Type Industry
Plan Rectangular
Structural System Concrete
No. of Stories One

Roof Type

☐ Gable ☐ Hip
☒ Flat ☐ Pyramidal
☐ Monitor ☐ Other (specify) _____
☐ Gambrel
☐ Shed

Roof Material

☐ Wood Shingle
☐ Wood Shake
☐ Composition
☐ Slate
☐ Tar/Built-up
☐ Tile
☐ Metal (specify) _____
☒ Other (specify) Concrete and asphalt covered with soil
☐ Not visible

Foundation

☐ Log ☐ Concrete
☐ Post & Pier ☐ Block
☐ Stone ☐ Poured
☐ Brick ☐ Other (specify) _____
☐ Not visible

Cladding (Exterior Wall Surfaces)

☐ Log
☐ Horizontal Wood Siding
Rustic/Drop ☐
Clapboard ☐

☐ Wood Shingle
☐ Board and Batten
☐ Vertical Board
☐ Asbestos/Asphalt
☐ Brick
☐ Stone
☐ Stucco
☐ Terra Cotta
☒ Concrete/Concrete Block
☐ Vinyl/Aluminum Siding
☐ Metal (specify) _____
☐ Other (specify) _____

Integrity

(Include detailed description in
Description of Physical Appearance)

	Intact	Slight	Moderate	Extensive
Changes to plan	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Changes to windows	<u>N/A</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Changes to original cladding	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Changes to interior	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (specify)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

State of Washington, Department of Community Development
Office of Archaeology and Historic Preservation
111 21st Avenue Southwest, Post Office Box 48343
Olympia, Washington 98504-8343 (206)753-4011

LOCATION SECTION

Address 218-E-16 Building, 200 East Area
City/Town/County/Zip Code Richland/Benton County/99352
Twp 12 N Range 26 E Section 1 I/4 Section SW 1/4 1/4 Sec _____
Tax No./Parcel No. _____ Acreage _____
Quadrangle or map name Gable Butte, Washington, 7.5 minute series
UTM References Zone 11 Easting _____ Northing _____
Plat/Block/Lot _____
Supplemental Map(s) _____



High Styles/Forms (Check one or more of the following)

<input type="checkbox"/> Greek Revival	<input type="checkbox"/> Spanish Colonial Revival/Mediterranean
<input type="checkbox"/> Gothic Revival	<input type="checkbox"/> Tudor Revival
<input type="checkbox"/> Italianate	<input type="checkbox"/> Craftsman/Arts & Crafts
<input type="checkbox"/> Second Empire	<input type="checkbox"/> Bungalow
<input type="checkbox"/> Romanesque Revival	<input type="checkbox"/> Prairie Style
<input type="checkbox"/> Stick Style	<input type="checkbox"/> Art Deco/Art Moderne
<input type="checkbox"/> Queen Anne	<input type="checkbox"/> Rustic Style
<input type="checkbox"/> Shingle Style	<input type="checkbox"/> International Style
<input type="checkbox"/> Colonial Revival	<input type="checkbox"/> Northwest Style
<input type="checkbox"/> Beaux Arts/Neoclassical	<input type="checkbox"/> Commercial Vernacular
<input type="checkbox"/> Chicago/Commercial Style	<input type="checkbox"/> Residential Vernacular (see below)
<input type="checkbox"/> American Foursquare	<input checked="" type="checkbox"/> Other (specify)
<input type="checkbox"/> Mission Revival	<u>Industrial Vernacular</u>

Vernacular House Types

<input type="checkbox"/> Gable Front	<input type="checkbox"/> Cross Gable
<input type="checkbox"/> Gable Front and Wing	<input type="checkbox"/> Pyramidal/Hipped
<input type="checkbox"/> Side Gable	<input type="checkbox"/> Other (specify) _____

NARRATIVE SECTION

Study Unit Themes (check one or more of the following)

- | | |
|--------------------------|-------------------------------------|
| <input type="checkbox"/> | Agriculture |
| <input type="checkbox"/> | Architecture/Landscape Architecture |
| <input type="checkbox"/> | Arts |
| <input type="checkbox"/> | Commerce |
| <input type="checkbox"/> | Communications |
| <input type="checkbox"/> | Community Planning/Development |

- | | |
|--------------------------|---------------------------------|
| <input type="checkbox"/> | Conservation |
| <input type="checkbox"/> | Education |
| <input type="checkbox"/> | Entertainment/Recreation |
| <input type="checkbox"/> | Ethnic Heritage (specify) _____ |
| <input type="checkbox"/> | Health/Medicine |
| <input type="checkbox"/> | Manufacturing/Industry |
| <input type="checkbox"/> | Military |

- | | |
|-------------------------------------|---|
| <input type="checkbox"/> | Politics/Government/Law |
| <input type="checkbox"/> | Religion |
| <input type="checkbox"/> | Science & Engineering |
| <input type="checkbox"/> | Social Movements/Organizations |
| <input type="checkbox"/> | Transportation |
| <input checked="" type="checkbox"/> | Other (specify) <u>Cold War Era</u> |
| <input checked="" type="checkbox"/> | Study Unit Sub-Theme(s) <u>Waste Management (Liquid)</u> |

Statement of Significance

Date of Construction 1988 (101 Vault), 1993 (102 - 105 Vaults) Architect/Engineer/Builder Westinghouse Hanford Company

☒ In the opinion of the surveyor, this property appears to meet the criteria of the National Register of Historic Places.

☒ In the opinion of the surveyor, this property is located in a potential historic district (National and/or local).

The 218-E-16 Grout Vaults are one end unit of a larger facility called the Grout Processing Facility, at which liquid process wastes were mixed with grout-forming solids to form a slurry. The vaults were designed to receive the waste slurry end product, hold it as it hardened, and, when full, serve as a permanent sealed receptacle. The project concept originated in the mid-1980s, and was tested for about a year from August, 1988 through July, 1989. Although original project plans called for the construction of 43 vaults, the project was halted in the mid-1990's following the construction of the four extant vaults. Vault 101 was a different design than the other four vaults and was closed in 1994 and then filled with phosphate/sulfate waste in 1998-99. The vaults are not currently in use, and there are no plans to use them in the future.

The basic procedure, which was monitored remotely from a control room, was as follows. Liquid waste and the dry solids were fed into a grout mixer. The resulting mixed slurry was then fed into a tank equipped with a pump which delivered the slurry via carbon steel piping into the disposal vault. The grout vaults represent one important method of attempting to consolidate and control radioactive liquid wastes generated at the Hanford site. Therefore, it is the conclusion of the U.S. Department of Energy that the 218-E-16 Grout Vaults are eligible for inclusion in the National Register of Historic Places as a contributing property within the Hanford Site Manhattan Project and Cold War Era Historic District.

Description of Physical Appearance

The 218-E-16 Grout Vaults are located at the far eastern end of the 200 East Area, in a separately fenced rectangular area outside the original fenced perimeter for the area. There are five existing vaults, in varying stages of construction, all made of cast-in-place concrete with an interior coating of asphalt. In a completed state, the subsurface rectangular vaults measure 123.5 feet by 50.5 feet by 34 feet deep on the inside. While the vaults were capable of holding up to 1,600,000 gallons (5,300,000 liters) of liquid waste, they were expected to typically hold 1,400,000 gallons (5,300,000 liters). The vaults are capped with precast concrete panels. The panels accommodate grout distribution piping, excess water removal piping, material level monitors, and ventilation equipment. A portable instrument house equipped with monitoring devices was used to keep track of liquid, temperature, and pressure levels. The vaults are covered with approximately 30 inches of asphalt and 40 inches of earth, which serves as a radiation shield for workers and keeps out water.

Major Bibliographic References

Campbell, G.D. 1986. *Functional Design Criteria 218-E-16 Grouted Waste Disposal Facilities Project B-566 (Expense Funded)*. SD-566-FDC-001. Richland, Washington.

United States Department of Energy. 1992. *Grout Treatment Facility Dangerous Waste Permit Application*. DOE/RL-88-27 Revision 2. Richland, Washington.

